CONDITION

Mitral valve prolapse

Mitral valve prolapse is when part of the heart's mitral valve bulges backward as the heart contracts.

WHAT IT IS
Heart valve leaflets bulging into the left upper chamber

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
Often none, palpitations, chest discomfort, shortness of breath

WHAT CAUSES IT
Usually degenerative tissue changes, sometimes inherited

HOW IT IS DIAGNOSED
Echocardiogram, sometimes transesophageal echocardiogram

MAIN TREATMENT
Monitoring; symptom medicines or valve repair for significant leakage

CAN IT BE CURED?
Sometimes - valve repair can correct leakage

IS IT AN EMERGENCY?
Sometimes - sudden breathlessness, fainting, or stroke signs

LONG-TERM OUTLOOK
Usually normal life; significant leakage needs monitoring

Overview

Mitral valve prolapse is a condition affecting the valve between the heart's left upper chamber and left lower chamber. This valve has two flaps, called leaflets. They normally close firmly when the heart contracts.

With mitral valve prolapse, one or both leaflets bulge backward into the upper chamber. This happens because the valve tissue or its supporting cords are shaped differently or have become stretched.

The valve may still close properly. In that case, the condition may have little or no effect on the heart. Some people develop mitral regurgitation , meaning blood leaks backward through the valve. The amount of leakage can range from minimal to severe.

Most people with mitral valve prolapse have no symptoms and need only occasional monitoring. It matters because significant leakage can gradually place extra strain on the heart. Rarely, the condition is linked to serious heart rhythm problems.

Symptoms

Many people do not know they have mitral valve prolapse until it is found during an examination or heart scan. Symptoms, when present, do not always show how much the valve is leaking.

Possible symptoms include:

Palpitations are the feeling of being aware of your heartbeat. They may come from extra or early heartbeats, but they can also have causes unrelated to the valve.

Symptoms that gradually worsen can suggest increasing leakage or another heart problem. Breathlessness, ankle swelling, or reduced ability to exercise deserves medical assessment rather than being assumed to come from mitral valve prolapse.

- A racing, pounding, fluttering, or skipping heartbeat
- Chest discomfort that may not be related to exercise
- Shortness of breath, especially with activity or when lying flat
- Tiredness or reduced exercise tolerance
- Light-headedness or, less commonly, fainting

Causes and risk factors

Mitral valve prolapse usually develops because the valve tissue becomes unusually loose, thickened, or stretchy. This is sometimes called myxomatous degeneration . The cords that support the leaflets may also stretch or, occasionally, tear.

The tendency can run in families, although many people have no clear family history. It can also occur with inherited connective tissue conditions, which affect the material that supports structures throughout the body. Examples include Marfan syndrome and some forms of Ehlers-Danlos syndrome.

Age-related changes may make an existing valve problem more noticeable. A heart attack, infection, or other heart condition can damage the mitral valve, although these causes are not always described as classic mitral valve prolapse.

Having the condition does not mean that a close relative will necessarily develop it. If several family members have significant valve disease, early sudden cardiac death, or an inherited connective tissue condition, mention that history during a medical assessment.

Diagnosis

A clinician may first suspect mitral valve prolapse after hearing a click or heart murmur through a stethoscope. A murmur is the sound of turbulent blood flow. These sounds alone do not confirm the condition.

A transthoracic echocardiogram is the main test used to diagnose it. This painless ultrasound scan shows the valve moving and measures whether blood is leaking backward. It can also show the size and pumping function of the heart chambers.

Sometimes more detail is needed. A transesophageal echocardiogram uses an ultrasound probe passed into the swallowing tube after sedation and throat numbing. Because the probe sits close to the heart, it can provide clearer pictures. This test may be used when standard images are unclear or before a valve procedure.

Other tests may assess symptoms or possible complications:

The echocardiogram should describe both the prolapse and the degree of mitral regurgitation. That distinction helps guide follow-up.

- An electrocardiogram, or ECG, records the heart's electrical activity
- A portable heart monitor records rhythms over one or more days
- An exercise test checks symptoms and heart function during activity
- Cardiac MRI can measure leakage and heart size when ultrasound findings are uncertain

Treatment and management

Mitral valve prolapse without important leakage usually does not need treatment. Periodic reviews may be recommended to check for new symptoms, a changing murmur, or increasing regurgitation. How often an echocardiogram is needed is based mainly on the amount of leakage and how the heart is responding.

Medicines do not make a prolapsing leaflet return to its usual shape. They may be used for related symptoms or complications. For example, a medicine that slows the heart may reduce troublesome palpitations in some people. Diuretics like furosemide or hydrochlorothiazide , sometimes called water tablets, may help fluid buildup if significant leakage has affected heart

function.

An irregular rhythm called atrial fibrillation may require treatment to control the heart rate or rhythm. Some people with atrial fibrillation also need medicine to reduce the risk of blood clots, based on their overall stroke risk.

Severe mitral regurgitation may require a procedure even before major symptoms develop if the heart is starting to enlarge or weaken. When possible, surgeons often repair the person's own valve. Repair may involve reshaping the leaflets, replacing damaged supporting cords, and placing a ring around the valve.

Valve replacement is used when a lasting repair is not possible. A catheter-based procedure that clips parts of the valve together may be considered for selected people who have severe leakage and a high risk from surgery.

Mitral valve prolapse by itself is not a reason to take antibiotics like amoxicillin or doxycycline before dental work. Preventive antibiotics are reserved for certain people at particularly high risk from infective endocarditis, such as some people with prosthetic heart valves or a previous episode of endocarditis.

Complications

The main complication is worsening mitral regurgitation. Persistent leakage makes the heart pump extra blood and can gradually enlarge the left upper and lower chambers. If severe leakage is not treated when needed, the heart muscle may eventually weaken.

Other possible complications include:

A supporting cord can occasionally tear, causing the valve to leak suddenly and severely. This may lead to abrupt breathlessness and needs urgent hospital assessment.

Serious rhythms beginning in the heart's lower chambers are uncommon. Risk is not the same for everyone with mitral valve prolapse. It may be higher when there is complex valve disease, scarring of the heart muscle, certain ECG findings, or a history of unexplained fainting. A simple diagnosis of prolapse does not by itself mean sudden cardiac death is likely.

- Atrial fibrillation or other abnormal heart rhythms
- Heart failure, when the heart cannot meet the body's needs effectively
- Raised pressure in the blood vessels of the lungs
- Infective endocarditis, an infection of the valve's inner surface
- Blood clots or stroke, particularly when atrial fibrillation is present

Prevention

Mitral valve prolapse usually cannot be prevented. Inherited valve structure and gradual tissue changes are not caused by something you did.

You can still protect your wider heart health. Avoid smoking, stay physically active within any advice you have received, and manage blood pressure, cholesterol, and diabetes if these affect you.

Good dental care is also important because bacteria from an unhealthy mouth can enter the bloodstream. Brush regularly, clean between your teeth, and arrange routine dental care. This lowers general infection risk, although it cannot guarantee prevention of endocarditis.

Living with it and what to expect

For many people, mitral valve prolapse remains stable for years and does not interfere with work, family life, travel, or ordinary exercise. Some people never develop more than a small amount of leakage.

The condition itself does not usually disappear. Over months or years, the valve may stay unchanged or the leakage may slowly increase. Less often, a damaged supporting cord causes a more sudden change. Regular follow-up is intended to find important changes before the heart is permanently affected.

Most people without significant leakage can be active without special restrictions. If you have severe regurgitation, reduced heart function, an enlarged aorta from a connective tissue condition, or a concerning heart rhythm, your exercise advice may be different. Competitive or high-intensity exercise may require an individual assessment.

Pregnancy is often well tolerated when the valve leaks only mildly and heart function is normal. Significant regurgitation, heart rhythm problems, or reduced heart function may require planning and closer monitoring before and during pregnancy.

Keep a record of your diagnosis and the results of major heart scans. Attend routine follow-up even when you feel well, because valve leakage can progress before it causes clear symptoms. Between visits, note changes in exercise tolerance, breathing, swelling, palpitations, or fainting.

When to get medical help

Arrange a routine medical appointment if you develop new palpitations, mild breathlessness,

chest discomfort, or a gradual reduction in your ability to exercise. These symptoms have many possible causes and should not automatically be blamed on the valve.

Seek prompt medical advice if palpitations last longer than usual, keep returning, or occur with light-headedness. New ankle swelling, breathlessness when lying flat, or waking at night short of breath also needs timely assessment.

Call emergency services for:

A fever that persists, especially with chills, night sweats, unusual tiredness, or worsening breathlessness, needs prompt medical review because it can be a sign of infective endocarditis.

- Sudden or severe difficulty breathing
- Fainting, especially during exercise or with palpitations
- Chest pressure or pain that is severe, persistent, or accompanied by sweating or nausea
- A very fast or irregular heartbeat with weakness, chest pain, or breathlessness
- Stroke signs, such as facial drooping, arm weakness, or difficulty speaking

Common questions

Is mitral valve prolapse serious?

It is usually not serious when there is little or no leakage and the heart is working normally. It becomes more important when regurgitation is severe, the heart enlarges, or abnormal rhythms develop. An echocardiogram helps define your situation.

Can mitral valve prolapse go away?

The shape of the valve usually does not return to normal on its own. It may remain stable and never need treatment. When severe leakage develops, valve repair can correct the way the valve closes.

Does mitral valve prolapse cause anxiety or panic attacks?

Palpitations, chest discomfort, and breathlessness can feel similar to anxiety symptoms. Mitral valve prolapse does not prove that anxiety is the cause, and anxiety does not explain every heart symptom. New or changing symptoms should be assessed on their own merits.

Can I exercise with mitral valve prolapse?

Most people with normal heart function and no significant leakage or dangerous rhythm can exercise normally. Restrictions may be appropriate with severe regurgitation, fainting, certain arrhythmias, or an associated connective tissue condition.

Do I need antibiotics before dental treatment?

Not for mitral valve prolapse alone. Antibiotics before certain dental procedures are used only for people with specific high-risk heart conditions. Tell your dentist about any previous endocarditis, prosthetic valve, or valve repair material.

Will I need heart surgery?

Most people do not. Surgery is considered when leakage becomes severe and causes symptoms or begins to affect the size or pumping function of the heart. The decision is based on imaging, symptoms, overall health, and whether a durable repair is likely.

Sources

- American Heart Association. Mitral Valve Prolapse
- Otto CM, Nishimura RA, Bonow RO, et al. 2020 ACC/AHA Guideline for the Management of Patients With Valvular Heart Disease . Circulation . 2021;143:e72-e227
- Vahanian A, Beyersdorf F, Praz F, et al. 2021 ESC/EACTS Guidelines for the management of valvular heart disease . European Heart Journal . 2022;43:561-632
- Sabbag A, Essayagh B, Barrera JDR, et al. EHRA expert consensus statement on arrhythmic mitral valve prolapse and mitral annular disjunction complex . Europace . 2022;24:1981-2003
- Merck Manual Consumer Version. Mitral Valve Prolapse